

### Abstract

A switching power supply circuit having a power factor improving function that makes it possible to improve power conversion efficiency and reduce size and weight of the circuit. A complex resonant converter is formed by at least combining a current resonant converter of a half-bridge coupling system on a primary side with a partial resonant voltage circuit. Power factor improvement is made by performing voltage feedback of a switching output of the complex resonant converter to a rectification current path by a power factor improving transformer (a loosely coupled transformer VFT), interrupting a rectification current by a rectifier diode, and thereby increasing a conduction angle of an alternating input current. Thus, for example, the power supply circuit having a power factor improving circuit does not need to employ a configuration in which a choke coil is inserted in a commercial alternating-current power supply line.